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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,544

10/12/2005

Uwe Ruppender

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EXAMINER

VELEZ, ROBERTO

ART UNIT

PAPER NUMBER

2829

MAIL DATE

DELIVERY MODE

06/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,544	Applicant(s) RUPPENDER ET AL.	
	Examiner Roberto Velez	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/23/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

Claim Objections

2. Claims 46-63 are objected to because of the following informalities: Claim 1, line 4, recites "the segment electrodes". It should recite "to segment electrodes". Claim 49, line 2, recites "segments (2, 3) is determined". It should recite "segments is determined". Claim 60, lines 4-5, recites "the measuring circuit, the LCD driver/decoder circuit, and the analytical circuit". It should recite "a measuring circuit, a LCD driver/decoder circuit, and an analytical circuit". Claims 62-63 has similar objection as in claim 46. Appropriate correction is required.
3. Claims 47-48 and 50-61 depending from claim 46 are objected for the same reason.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 46-63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 46-63 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: an amount of charge corresponding to the capacitance is transferred and integrated by the downstream integrator; switches Sa-Sd are controlled by the sequence control such that a charge transfer through the reference capacitor Cref effects a decrease and a charge transfer through the segment capacitance to be determined effects an increase in the integrator voltage; the charge balance of the integrator is monitored by means of the downstream comparator and can be kept constant by the sequence control by the option of transferring charge either through both capacitances or only through one of the capacitances; the ratio of the number of switching processes of the reference capacitance Cref and segment capacitance Cseg resulting for an even charge balance provides a digital result.
7. Claims 47-61 depending from claim 46 are rejected for the same reason.
8. For examining purposes, the Examiner is going to interpret independent claims 46, 62 and 63 in the following manner:

Determining the charge of the capacitance (Cseg) of the display segments by determining and measuring a charge balance ratio between the capacitance

(Cseg) of the display element and the reference capacitor while controlling the charge transfer of both the capacitance (Cseg) of the display element and a reference capacitor using a sequence control.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 46-50 and 62-63 are rejected as best understood by the Examiner under 35 U.S.C. 102(b) as being anticipated by ***Tamukai (US Pat. 6,262,589)***.

Regarding claim 46, ***Tamukai*** shows (Figures 3-4K) a method for testing the function of LCD displays comprising individual display segments, based on the difference in the electrical capacitance of defective and intact display segments, wherein the display segments [10] of the LCD display (TFT Array) are directly coupled to segment electrodes and back electrodes, the method comprising the steps of: determining (using 15) the charge of the capacitance (Cseg) of the display segments [10] by determining and measuring a charge balance ratio (difference in voltage) between the capacitance (Cseg) of the display element [Cp in 10] and the reference capacitor (Cs) (Col. 9, Ln 49-60) while controlling (using SW1, SW2, SW3) the charge transfer of both the capacitance (Cseg) of the display element and a reference capacitor using a sequence control (Col. 9, Ln 64-67 and Col. 9, Ln 1-20).

Regarding claim 47, **Tamukai** discloses everything as claimed above in claim 46; in addition, **Tamukai** shows (Figures 3-4K) wherein the capacitance [Cp] of the display segments [10] is determined by means of charges transferred by capacitive coupling (using 14 and Cs), whereby an electrical measuring current (applied by 11; Col. 9, Ln 6-7) is coupled capacitively via the capacitance [Cp] of the display segment [10] to be measured into an evaluation circuit [12] and the evaluation circuit [12] measures the charge coupled over (Col. 8, Ln 54-60).

Regarding claim 48, **Tamukai** discloses everything as claimed above in claim 46; in addition, **Tamukai** shows (Fig. 3) wherein the reference capacitor (Cs) is integrated into the LCD display [Cs, 14, 10].

Regarding claim 49, **Tamukai** discloses everything as claimed above in claim 46; in addition, **Tamukai** shows (Fig. 3) wherein the capacitance [Cp] of the display segments [10] is determined by means of a capacitance measuring method utilizing a $\Delta\Sigma$ conversion (using 15, 16; Col. 8, Ln 61-67).

Regarding claim 50, **Tamukai** discloses everything as claimed above in claim 46; in addition, **Tamukai** shows (Fig. 3) wherein an automatic measuring-circuit selector [13] is used to address individual display segments [10] for testing the function of the segments (Col. 9, Ln 2-5).

Regarding claims 62-63, **Tamukai** shows (Figures 3-4K) an electronic measuring system and a diagnostic device for testing the function of LCD displays comprising individual display segments [10], based on the difference in

the electrical capacitance of defective and intact display segments, wherein the display segments of the LCD display are directly coupled to segment electrodes and back electrodes, the diagnostic device comprising: a capacitance measuring facility [12] that allows the capacitance (Cseg) of the display segments to be determined directly with a capacitance measuring method by measuring the electrical charge stored in the display segment [Cp]; and an electronic circuit [15, 16] for measuring the capacitance of the display segments [Cp] with the capacitance measuring method which determines (using 15) the charge of the capacitance (Cseg) of the display segments [10] by determining and measuring a charge balance ratio (difference in voltage) between the capacitance (Cseg) of the display element [Cp in 10] and the reference capacitor (Cs) (Col. 9, Ln 49-60) while controlling (using SW1, SW2, SW3) the charge transfer of both the capacitance (Cseg) of the display element and a reference capacitor using a sequence control (Col. 9, Ln 64-67 and Col. 9, Ln 1-20).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over ***Tamukai (US Pat. 6,262,589)*** in view of ***Ha (US Pat. 6,493,047)***.

Regarding claim 58, **Tamukai** discloses everything as claimed above in claim 46.

Tamukai fails to disclose wherein the testing of the function of the display segment is performed during the ongoing operation of the LCD display. However, **Ha** discloses wherein the testing of the function of the display segment is performed during the ongoing operation of the LCD display (Col. 8, Ln 53-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of **Ha** into the device of **Tamukai** by testing the display segment during the ongoing operation of the LCD display. The ordinary artisan would have been motivated to modify **Tamukai** in the manner set forth above for the purpose of power conservation.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Velez whose telephone number is 571-272-8597. The examiner can normally be reached on Monday-Friday 8:00am-4:30 pm.

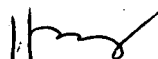
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha Nguyen can be reached on 571-272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2829

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Roberto Velez
Patent Examiner



HA TRAN NGUYEN
SUPERVISORY PATENT EXAMINER